



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,440	06/21/2001	David Landelle	P07266US00/RFH	2728

881 7590 07/14/2004
STITES & HARBISON PLLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER

TRAN, TRANG U

ART UNIT	PAPER NUMBER
----------	--------------

2614

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,440

Applicant(s)

LANDELLE ET AL.

Examiner

Trang U. Tran

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed April 27, 2004 have been fully considered but they are not persuasive.

In re pages 1-3, applicants argue that the procedures and objects of the present invention and of the Rohlfing patent are different. In the present invention, parameters of the lens system and initially determined using a reference camera, so that later use of the lens system on a different/on-site camera can be suitably made without a new calibration of the lens system. In the Rohlfing patent, the lens system is always used with the same camera; and the comparison is with a virtual image and not any different camera using the same lens system as claimed in both claims 1 and 2.

In response, the examiner respectfully disagrees. First at all, claims 1 and 2 recite **on-site camera and a reference camera**. However, claims 1 and 2 do not specifically state that **an on-site camera and a reference camera** are two different cameras. When the **on-site camera and the reference camera of claims 1-2 are the same camera**, Rohlfing reference anticipates claims 1-2 because, as recognized by applicants, the calibration of Rohlfing reference is used for the same camera.

Finally, even if the **on-site camera and the reference camera of claims 1-2 are two different cameras**, Rohlfing reference also anticipates claims 1-2 because the **claimed "reference camera"** would be anticipated by the **"virtual"**

Art Unit: 2614

camera of Rohlfing and the claimed **"on-site camera"** would be anticipated by the **"real"** camera of Rohlfing. See col. 4, lines 49-55.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Rohlfing (US Patent No. 5,990,935).

In considering claim 1, Rohlfing discloses all the claimed subject matter, note 1) the claimed (a) calibrating, once for all, determining intrinsic characteristics of the camera lens system while the lens system is mounted on a reference camera and establishing a computer file containing said intrinsic characteristics for obtaining a first calibration which is specific to the lens system and is carried out once for all is met by the real camera 40 and lens 42 which have a zoom ring 44 and a focus ring 46 to obtain a calibration datapoint for each and every possible zoom and focus setting of the real camera and entered datapoints into the FuseBox software (Fig. 3, col. 7, line 16 to col. 9, line 65), and 2) the claimed (b) further calibrating, on site, each time the lens system is used, an assembly comprising the on-site camera and the lens system mounted on the on-site camera so as to define transfer functions relating signals from said on-site camera sensors and from lens system sensors delivering signals responsive to

Art Unit: 2614

values of said adjustable parameters to actual values of said parameters, based on said file and of signals obtained by shooting predetermined characteristic points in a scene observed by the on-site camera is met by the virtual camera and the operator then adjusts the image generator's virtual field of view and virtual nodal point position until the composite image on the monitor showing the virtual environment and the real environment are identical (Figs. 1-3, col. 5, line 59 to col. 7, line 67 and col. 10, line 29 to col. 11, line 23).

In considering claim 2, Rohlfing discloses all the claimed subject matter, note 1) the claimed (a) performing a stage once and for always, comprising determining intrinsic characteristics of the lens, which stage is performed after the lens has been mounted on a reference camera, and comprising the following steps: taking a plurality of shots with the reference camera in different pan and tilt orientations and different zoom and focus values for obtaining respective successive images, for each shot, storing output signals from the encoders and positions in the image of at least two points, including a nearer point and a farther point in a scene observed in the shot is met by the real camera 40 and lens 42 which have a zoom ring 44 and a focus ring 46 to obtain a calibration datapoint for each and every possible zoom and focus setting of the real camera and entered datapoints into the FuseBox software (Fig. 3, col. 7, line 16 to col. 9, line 65), 2) the claimed drawing up an intrinsic calibration table by comparing values of the output signals and the positions of the points in the images by the reference camera is met by the FuseBox software which stored the calibration results, for the particular camera and lens combination to be calibrated (Fig. 3,

Art Unit: 2614

col. 7, line 16 to col. 10, line 28), and 3) the claimed (b) performing a stage on site after the lens has been mounted on an on-site camera to be used on site, comprising the steps of specifying operation conditions and repeating only some of the operations performed in stage (a) solely insofar as the operations are necessary for resetting origins is met by the virtual camera and the operator then adjusts the image generator's virtual field of view and virtual nodal point position until the composite image on the monitor showing the virtual environment and the real environment are identical (Figs. 1-3, col. 5, line 59 to col. 7, line 67 and col. 10, line 29 to col. 11, line 23) .

In considering claim 3, the claimed wherein the nearer point observed during stage (a) is a point source is met by the nodal point which is the exact point in space from which a perspective scene which are camera "sees" appears to be drawn (Fig. 1B, col. 4, line 49 to col. 5, line 67).

In considering claim 4, the claimed wherein the point source is a laser diode placed at a distance that is greater than and close to a shortest distance for which focussing is possible is met by the nodal point which is the exact point in space from which a perspective scene which are camera "sees" appears to be drawn (Fig. 1B, col. 4, line 49 to col. 5, line 67).

In considering claim 5, the claimed characterized in that all of the measurements of stage (a) are performed prior to performing all computations which are later performed subsequently and together is met by the calibration process of the real camera 40 and lens 42 which have a zoom ring 44 and a focus ring 46 to obtain a calibration datapoint for each and every possible zoom

Art Unit: 2614

and focus setting of the real camera and entered datapoints into the FuseBox software (Fig. 3, col. 7, line 16 to col. 9, line 65).

In considering claim 6, the claimed wherein during calculations the lens is represented by a mathematical model making use solely of functions having a single input variable is met by the nodal point moves forward and backward along the optical axis as a function of changing the zoom and/or focus setting (Fig. 1B, col. 4, line 49 to col. 5, line 16).

In considering claim 7, the claimed comprising the steps of converting a set consisting of all data delivered by the sensors and representing a condition of the instrumented camera into an audio signal, and transporting and recording said set in an audio-video environment is met by compositor 50 which coupled to an image generator 59 via a second video cable 54 and also coupled to a display monitor 56 via video cable 58 (Fig. 3, col. 7, lines 49-67).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

Art. Unit: 2614

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (703) 305-0090. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL H. LEE
PRIMARY EXAMINER

TT TT
July 10, 2004